

REMARKS

With the entry of this Amendment, claims 17-19 and 21-28 will be pending in this patent application.

In this paper, Applicant is canceling claims 5-16 and 20, is amending independent claim 17 and is adding new independent claim 27 and new dependent claims 24-26 and 28. Support for the subject matter recited in new independent claim 27 can be found in the specification in this application as filed on page 6, in the paragraph beginning on line 16, and in the paragraph bridging pages 7-8. As shown by the results of tests reported in Table 1 on page 12 of the specification, Sample 4, for which y is 6 mm, exhibits especially favorable flight distance compared to the other samples. Applicant submits that new claims 27 and 28 are allowable for reasons that are made evident in the discussion below.

PRIOR ART REJECTION I

Claims 17-23 were rejected under 35 USC 103(a) as being unpatentable over JP 8-280853 (JP '853) in view of US 5461056 (Manning). Applicant traverses this rejection insofar as it might be deemed applicable to claims 17-19 and 21-23 as now presented.

Without acquiescing in the rejection, Applicant has amended claim 17 to specify the range of x as being equal to or greater than -10 mm and equal to or smaller than -3 mm. Support for this amendment can be found in the specification in this application as filed in the paragraph bridging pages 8-9. As shown by the results of tests reported in Table 3 on page 16 of the specification, Sample 10, for which x is -4 mm, exhibits especially favorable flight distance compared to the other samples. These properties would seem to establish the significant impact of, if not the "criticality," of the x and y coordinates for the maximum resilience point that the Examiner seems reluctant to accept.

As recognized by the Examiner, JP '853 discloses golf club heads in which the clubface is thinned in a direction toward the sole, toward the toe, toward the toe or toward the heel. The differential deflection of the clubface resulting from the selective thinning is used to achieve spin control of a struck golf ball. JP '853 offers no disclosure whatsoever as to a maximum resilience

point on the club face. While variation in clubface thickness affects the location of a maximum resilience point, other attributes, such as shape and weight distribution of the club head also affect the location of this point, as determined by the USGA pendulum test. For example, in the club head shown in Fig. 3 of JP '853 the thickness of the clubface is thinned toward the toe. If only the flexure of the clubface is considered, this thickness variation would result in shifting of a maximum resilience point toward the toe. However, when weight distribution is considered, the weight of the clubface will be concentrated toward the heel, with a resultant shifting of the center of gravity toward the heel. The effects of the clubface thinning and the shift in the center of gravity will offset each other, so that the maximum resilience point is not moved appreciably by the selective clubface thinning.

The maximum resilience point cannot be fairly equated with a region of higher resilience, as the Examiner seems to suggest. Even in a region of relatively high resilience, the resilience at each point, as measured by the USGA pendulum test, is not the same, and there is a point where the resilience is the highest. As disclosed in this application, the location of this point away from the geometric center of the clubface yields significant benefits that are not found in golf club heads that do not incorporate this attribute.

The Examiner seems to rely on Manning for a disclosure of a club head with an enlarged sweet spot that extends beyond the geometric center of the clubface. The Examiner adds that "applicant has in essence moved the sweet spot to a location outside of the geometric center." This is not the case. The location of the sweet spot is commonly accepted as being at the intersection of a line normal to the clubface and extending through the center of gravity of the club head. As the discussion of JP '853 above makes evident, the point of maximum resilience is determined by attributes apart from those that define the sweet spot and does not necessarily coincide with the location of the sweet spot.

Amended claim 17 calls for a golf club head in which a maximum resilience point is displaced from the geometric center of the hitting surface within specified ranges in the x and y directions. Claim 17 also calls for the value of $(t_2 - t_1)$ at the maximum resilience point to be within a range that is greater than the value of $(t_2 - t_1)$ at the center of the hitting surface. Applicant submits that the values of $(t_2 - t_1)$ are definitive of physical properties that can be

determined by persons skilled in the art. Applicant submits that these properties warrant the same consideration that is commonly accorded other properties, such as weight and size. Simply put, the disclosures in JP '853 and Manning cannot, individually or in any reasonable combination, meet or make obvious the requirements of Applicant's claims.

In view of the foregoing observations, Applicant submits that no reasonable combination of the disclosures in JP '853 and Manning can properly serve as a basis for rejecting claim 17 or dependent claims 18, 19 and 21-26, as now presented, under 35 USC 103(a).

PRIOR ART REJECTION II

Claim 17 was rejected under 35 USC 103(a) as being unpatentable over a January 27, 2003 Titleist Press Release in view of US 2005/0059508 A1 (Burnett et al.). Applicant traverses this rejection insofar as it might be deemed applicable to claim 17 as now presented.

The Examiner acknowledges that the disclosure in the Titleist Press Release offers no details of the construction of the 983K titanium club head. From the disclosure in Burnett et al., the Examiner finds that the 983K club head has a maximum coefficient of restitution at a point that is 5.08 mm above the geometric face center.

Without acquiescing in the Examiner's finding regarding attributes of the 983K club head, Applicant notes that there is no suggestion in either of the cited documents of the range for x as recited in amended claim 17.

In view of the foregoing observations, Applicant submits that no reasonable combination of the disclosures in the Titleist Press Release and Burnett et al. can properly serve as a basis for rejecting claim 17, as now presented, under 35 USC 103(a).

PRIOR ART REJECTION III

Claims 17 and 18 are rejected under 35 USC 103(a) as being unpatentable over US 5851160 (Rugge et al.). Applicant traverses this rejection insofar as it might be deemed applicable to either of claims 17 and 18 as now presented.

In the Rugge et al. club head, the center of gravity is located toward the heel. Applicant cannot find in Rugge et al. any disclosure bearing on the location of a maximum resilience point of the clubface.

In view of the foregoing observations, Applicant submits that the disclosure in Rugge et al. cannot properly serve as a basis for rejecting either of claims 17 and 18, as now presented, under 35 USC 103(a).

PRIOR ART REJECTION IV

Claims 17-20 were rejected under 35 USC 103(a) as being unpatentable over a hypothetical club head having a maximum resilience point at design coordinates $x=0$ and $y=0$ on the clubface and expected manufacturing tolerances that would effect a shift of the maximum resilience point minutely away from the design coordinates. Applicant traverses this rejection insofar as it might be deemed applicable to any of claims 17-19 as now presented.

Without acquiescing in the rationale advanced by the Examiner, Applicant notes that amended claim 17 calls for a displacement x of -10 mm to -3 mm that is obviously far greater than a displacement that would result from manufacturing tolerances.

Applicant submits that the hypothetical club head envisioned by the Examiner cannot properly serve as a basis for rejecting any of claims 17-19 as now presented, under 35 USC 103(a).

OTHER PRIOR ART

Applicant has considered the other prior art cited by the Examiner. Applicant is not commenting on this prior art, because it was not applied against the claims in this application.

CONCLUSION

In view of the amendments, observations and arguments presented herein, Applicant respectfully requests that the Examiner reconsider and withdraw the rejections stated in the outstanding Office Action and recognize all of the pending claims as allowable.

If unresolved matters remain in this application, the Examiner is invited to contact Frederick R. Handren, Reg. No. 32,874, at the telephone number provided below, so that these matters can be resolved expeditiously.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

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Respectfully submitted,

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